

IN THE CLAIMS:

1-7. (canceled)

8. (currently amended) A heat exchanger assembly for a gas turbine engine, said heat exchanger assembly comprising:

an annular manifold comprising an inlet manifold coupled in flow communication with a compressor and an outlet manifold coupled in flow communication with a combustor, said annular manifold substantially concentrically aligned with respect to an axis of rotation of the gas turbine engine, and said inlet manifold and said outlet manifold each including an outermost surface having a substantially equal radial distance with respect to the axis of rotation of the gas turbine engine; and

an annular heat exchanger coupled in flow communication to ~~a~~the compressor ~~via said annular manifold~~, said heat exchanger configured to channel compressor discharge air to ~~a~~said combustor, said heat exchanger assembly coupled to said gas turbine engine such that said heat exchanger is substantially concentrically aligned with respect to ~~an~~the axis of rotation of the gas turbine engine, said heat exchanger comprising a plurality of heat exchanger elements aligned substantially perpendicular to a direction of exhaust flow discharged from the gas turbine engine.

9. (currently amended) A heat exchanger assembly in accordance with Claim 8 further comprising an outer casing coupled to said heat exchanger and to a gas turbine rear frame such that said annular heat exchanger is substantially concentrically aligned with respect to ~~an~~the axis of rotation of the gas turbine engine.

10. (previously presented) A heat exchanger assembly in accordance with Claim 8 further comprising a plug nozzle fixedly secured to a gas turbine rear frame to facilitate controlling an amount of exhaust flow channeled through said heat exchanger.

11. (withdrawn) A heat exchanger assembly in accordance with Claim 8 further comprising a plug nozzle coupled to a gas turbine rear frame, said plug nozzle moveable with respect to said heat exchanger to facilitate channeling exhaust flow through said heat exchanger.

12. (withdrawn) A heat exchanger assembly in accordance with Claim 11 further comprising a translation apparatus coupled to said plug nozzle to facilitate regulating the quantity of exhaust flow through said heat exchanger.

13. (withdrawn) A heat exchanger assembly in accordance with Claim 12 wherein said translation apparatus comprises at least one of a mechanical device, a hydraulic device, and a pneumatic device.

14. (withdrawn) A heat exchanger assembly in accordance with Claim 12 further comprising a drive mechanism coupled to said translation device, said drive mechanism configured to selectively translate said plug nozzle to facilitate regulating the quantity of exhaust flow through said heat exchanger.

15. (currently amended) A heat exchanger assembly in accordance with Claim 8 ~~further comprising:~~

~~an inlet manifold coupled in flow communication with said compressor;~~

~~an outlet manifold coupled in flow communication with said combustor; and~~

wherein said heat exchanger comprises a plurality of heat exchanger elements, each said heat exchanger element comprising an inlet side in flow communication with said inlet manifold and an outlet side in flow communication with said outlet manifold.

16. (original) A heat exchanger assembly in accordance with Claim 15 wherein said inlet manifold comprises a cross-sectional area that is inversely proportional to a cross-sectional area of said outlet manifold.

17. (currently amended) A gas turbine engine comprising:

a compressor;

a combustor downstream from said compressor;

a turbine coupled in flow communication with said combustor; and

a heat exchanger assembly comprising:

an annular manifold comprising an inlet manifold coupled in flow communication with said compressor and an outlet manifold coupled in flow communication with said combustor, said annular manifold concentrically aligned with respect to an axis of rotation of the gas turbine engine, and said inlet manifold and said outlet manifold each including an outermost surface having a substantially equal radial distance with respect to the axis of rotation of the gas turbine engine; and

an annular heat exchanger comprising a plurality of heat exchanger elements, said heat exchanger coupled in flow communication to ~~a~~said compressor via said annular manifold, said heat exchanger configured to channel compressor discharge air to said combustor, said heat exchanger assembly coupled to said gas turbine engine such that said annular heat exchanger is substantially concentrically aligned with respect to ~~an~~the axis of rotation of the gas turbine engine, said plurality of heat exchanger elements aligned in an approximate sinusoidal arrangement extending around an inner periphery of an outer casing.

18. (previously presented) A gas turbine engine in accordance with Claim 17 wherein said heat exchanger assembly further comprises a plug nozzle fixedly secured to a gas turbine rear frame to facilitate controlling an amount of exhaust flow channeled through said heat exchanger.

19. (withdrawn) A gas turbine engine in accordance with Claim 17 wherein said heat exchanger assembly further comprises a plug nozzle coupled to a gas turbine rear frame, said plug nozzle moveable with respect to said heat exchanger to facilitate channeling exhaust flow through said heat exchanger.

20. (withdrawn) A gas turbine engine in accordance with Claim 19 wherein said heat exchanger assembly further comprises:

a translation apparatus coupled to said plug nozzle to facilitate regulating the quantity of exhaust flow through said heat exchanger; and

a drive mechanism coupled to said translation device, said drive mechanism configured to selectively translate said plug nozzle to facilitate regulating the quantity of exhaust flow through said heat exchanger.

21. (previously presented) A heat exchanger assembly in accordance with Claim 8 wherein said heat exchanger elements further comprise a plurality of heating fins aligned substantially parallel to a direction of exhaust flow discharged from the gas turbine engine.